



## CERTIFICATE OF ANALYSIS

### Amino Acid Calibration Standard (with Norleucine) For Lithium Systems 011006P

**Product:** Native Sample Calibration Standard (With Norleucine) for Lithium Systems

**Part Number:** 011006P

**Lot Number:** 712,009

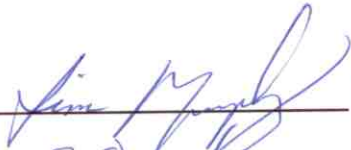
**Test Start Date:** 12/05 - 12/07/07

**Primary Application:** This calibration standard is a solution of 43 amino acids and ammonia in 0.27 N Lithium citrate buffer, pH 2.36, with 0.08% phenol added as a preservative. This calibration standard is intended to be used for calibration of chromatographic instrumentation for determination of amino acids.

**Acceptance Criteria:** The concentrations for 43 amino acids and ammonia are within  $\pm 4\%$  of those stated below. These values are based on the results of HPLC analysis using certified NIST amino acids standard and Sigma amino acids standard.

Compound	Concentrations $\mu\text{M}/\text{mL}$
$\beta$ -Alanine	0.25
Alanine	0.25
D,L- $\alpha$ -amino-adipic acid	0.25
$\gamma$ -Amino-butyric acid	0.25
$\alpha$ -Amino- <i>n</i> -butyric acid	0.25
D,L- $\beta$ -Amino- <i>i</i> -butyric acid	0.25
$\alpha$ -Amino- $\beta$ - guanidinopropionic acid	0.25
Ammonia	0.25
Anserine	0.25
Arginine	0.25
Asparagine	0.25
Aspartic acid	0.25
Carnosine	0.25
Citrulline	0.25
Creatinine	0.25
Cystathionine	0.25
Cystine	0.25
Ethanolamine	0.25
Glutamic acid	0.25
Glycine	0.25
Histidine	0.25

Compound	Concentrations $\mu\text{M}/\text{mL}$
D,L-Homocystine	0.25
D,L&allo-Hydroxylysine	0.25
4-trans-L-Hydroxyproline	0.25
Isoleucine	0.25
Leucine	0.25
Lysine	0.25
Methionine	0.25
1-Methyl-histidine	0.25
3-Methyl-histidine	0.25
Norleucine	0.25
Ornithine	0.25
Phenylalanine	0.25
<i>o</i> -Phosphoethanolamine	0.25
D,L- <i>o</i> -Phosphoserine	0.25
Proline	0.25
Sarcosine	0.25
Serine	0.25
Taurine	0.25
Threonine	0.25
Tryptophan	0.25
Tyrosine	0.25
Urea	0.25
Valine	0.25

Analysis Certified by:  Date: 07 Dec. 07  
VP Operations  
 Title

**ACCEPTED**  
 PICKERING LABORATORIES, INC.  
 QUALITY ASSURANCE